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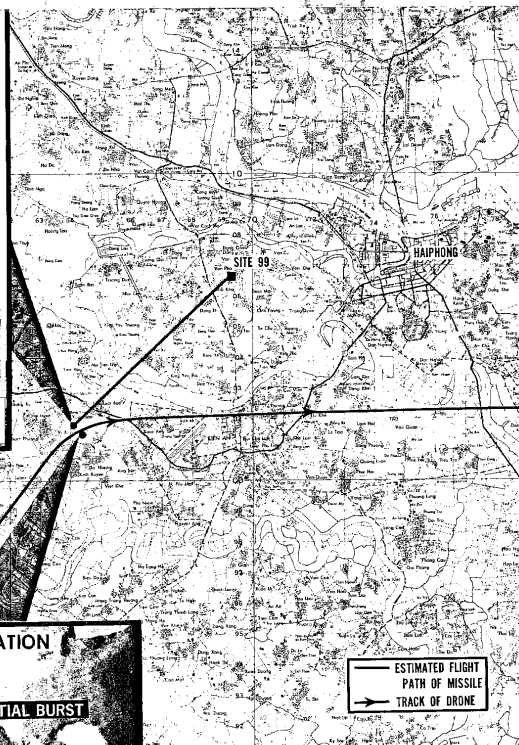
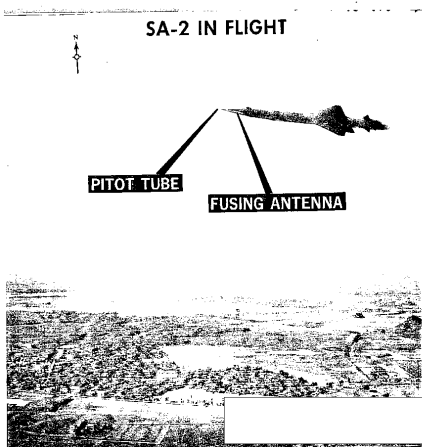


# SA-2 REACTIONS TO RECONNAISSANCE AIRCRAFT

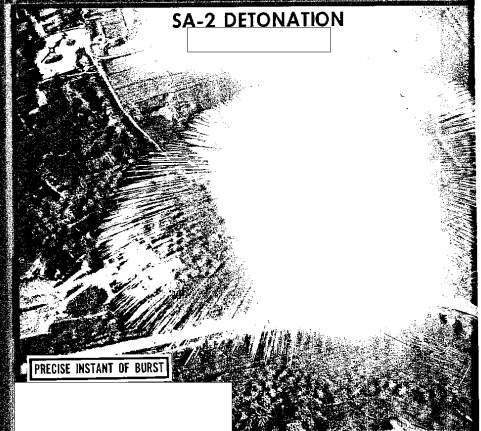
## NORTH VIETNAM

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SA-2 IN FLIGHT



SA-2 DETONATION

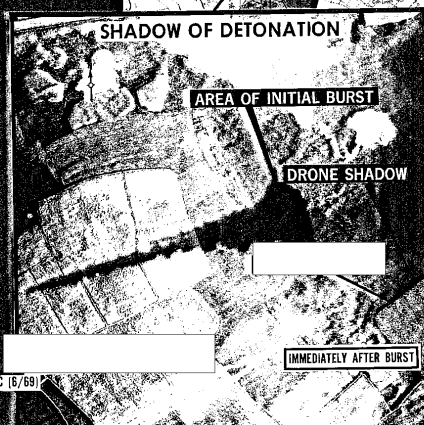


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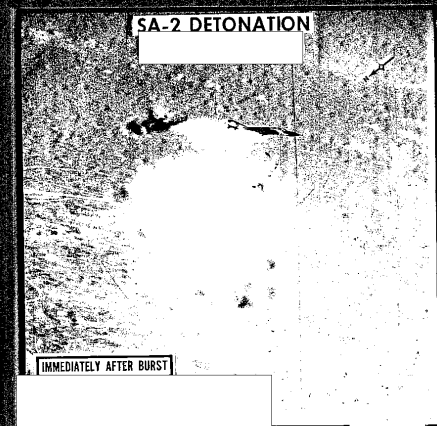
SHADOW OF DETONATION



M-5861 NPIC (6/69)

ESTIMATED FLIGHT  
PATH OF MISSILE  
TRACK OF DRONE

SA-2 DETONATION



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SA-2 REACTIONS TO RECONNAISSANCE AIRCRAFT  
NORTH VIETNAM

1. SIGNIFICANCE:

THIS BRIEFING BOARD PROVIDES SOME RARE TECHNICAL OBSERVATIONS OF THE SA-2 MISSILE IN FLIGHT AND AT THE POINT OF DETONATION.

2. LOCATION:

HAIPHONG AREA

3. BACKGROUND:

THERE HAVE BEEN MORE THAN 5000 SA-2 FIRINGS IN NORTH VIETNAM ACHIEVING LIMITED SUCCESS. BOTH MISSILES IN FLIGHT AND DETONATING HAVE BEEN SEEN BEFORE BUT NEVER ON PHOTOGRAPHY OF THE INTERPRETABILITY SHOWN ON THIS BOARD.

4. MISSION READOUT:



PHOTOGRAPHED AN SA-2

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MISSILE IN FLIGHT, 6.9 NM SOUTHWEST OF HAIPHONG. THE MISSILE IS A MOD I/II VERSION AS IDENTIFIED BY THE LOCATION OF THE FUSING ANTENNAS. THE NOSE PROBE OR PITOT TUBE IS ALSO CLEARLY VISIBLE. THE NEXT FRAME OF PHOTOGRAPHY TAKEN A

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GROUP 1 EXCLUDED FROM  
AUTOMATIC DOWNGRADING  
AND DECLASSIFICATION

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FRACTION OF A SECOND LATER SHOWS THE SHADOW OF THE MISSILE DETONATION ON THE GROUND.



PHOTOGRAPHED AN SA-2 WARHEAD

25X1

ALMOST AT THE PRECISE INSTANT OF DETONATION. THIS RARE PHOTOGRAPH PROVIDED CLOSE OBSERVATION OF THE RESULTANT DONUT-SHAPED BLAST RING.



SHOWS THE

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SHOOTDOWN OF AN RF-4C AIRCRAFT BY AN SA-2 MISSILE OVER HANOI. THIS IS THE TYPE BURST NORMALLY SEEN ON PHOTOGRAPHY.

5. REMARKS:

THE PHOTOGRAPHY WHICH SHOWS THE MISSILE IN FLIGHT GIVES THE FIRST CLEAR LOOK AT THE PITOT TUBE ON THE SA-2 MOD I/II MISSILE. THIS TUBE ONLY EXTENDS WHEN THE MISSILE IS IN FLIGHT WHEREAS ON THE MOD III AND IV VERSION IT IS PERMANENTLY EXTENDED. THE MISSILE WAS AT A DISTANCE OF 135 FEET FROM THE DRONE WHEN IT WAS PHOTOGRAPHED AND DETONATED AN INSTANT LATER [REDACTED] FROM AND SLIGHTLY 25X1 TO THE REAR OF THE DRONE. APPARENTLY THE SHAPE OF THE CHARGE IN THE WARHEAD ALLOWED THE DRONE TO ESCAPE DESTRUCTION.

THE BLAST PATTERN OBSERVED IS THE FIRST TIME A COMPLETE PATTERN AT THE INSTANT OF DETONATION HAS BEEN OBSERVED ALTHOUGH A SMALL PORTION OF THIS PATTERN WAS OBSERVED IN JULY 1968.

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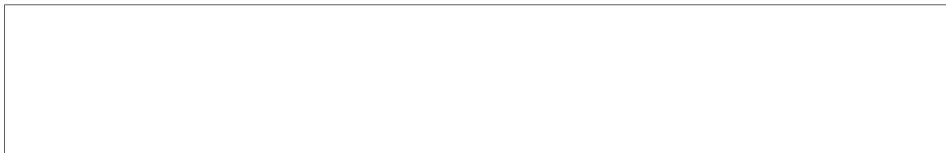


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THE DRONE, WHEN FIRED UPON, WAS TRAVELING AT APPROXIMATELY 480 KNOTS, AT AN ALTITUDE OF 1,130 FEET. THE MISSILE WHEN PHOTOGRAPHED  WAS TRAVELING AT APPROXIMATELY 1,800 FT/SEC (1,080 KNOTS) AT AN ALTITUDE OF 1,140 FEET AND IN THE OPPOSITE DIRECTION OF THE DRONE.

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MAP REFERENCE: AMS SERIES L7014, SHEET 6350 IV, SCALE 1:50,000

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